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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/818,884	03/17/97	YAMAZAKI	S 0756-1653

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EXAMINER

NGUYEN, D

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 03/02/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/818,884

Applicant(s)
Yamazaki et al.

Examiner
Dung Nguyen

Group Art Unit
2871



☒ Responsive to communication(s) filed on Jul 24, 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-7, 9, 10, 17-24, 26, 27, and 30-55 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-7, 9, 10, 17-24, 26, 27, and 30-55 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 47

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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The request filed on 07/24/2000 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 08/818,884 is acceptable and a CPA has been established. An action on the CPA follows.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "the first TFT having a bottom gate type and the second TFT having a top gate type formed on the first substrate" must be shown or the feature cancelled from the claims. No new matter should be entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

3. Claims 7, 9-10, 17-19, 27, 30, 51-52 and 54 are rejected under 35 U.S.C. 102(e) as being anticipated by Takemura, US Patent No. 5,581,092.

The above claims are anticipated by Takemura's figures 7 and 8A-8D which disclose a liquid crystal display device comprising:

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- an insulating substrate (101);
- an active matrix circuit and a driving circuit (fig. 8D);
- a semiconductor integrated circuit chip (IC) connected to the driving circuit (fig.7);
- a liquid crystal material inherently formed on the insulating substrate.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 20, 45-46 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takemura, US Patent No. 5,581,092.

Regarding claims 20 and 53, Takemura discloses the claimed invention as described above except for a COG technology using for connecting the IC chip with the driving circuit. One of ordinary skill in the art would have realized the desire to connect the IC chip to the driving circuit by COG. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to connect between the IC chip and the driving circuit by a COG because methods such as wire bonding, TAB, and COG are conventional methods for electrical connection in the art, and the use of one method over another merely reflects the desire of the

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manufacturer and/or the practical considerations involved in the fabrication of an LCD device such as the design of the overall device, ease of manufacturing, cost efficiency, etc.

Regarding claims 45-46 and 55, Takemura discloses the claimed invention as described above except for a wiring connection comprising indium tin oxide (ITO) formed over the insulating substrate. It would have been obvious to one of ordinary skill in the art at the time of the invention to use ITO based material for the wire connection since it has been held to be within the general skill in the art to use a known material that have a good conductivity for connecting.

6. Claims 1-7, 9-10, 17-24, 26-27 and 30-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's submitted prior art Yamazaki '858, in view of Applicant's submitted prior art Sawatsubashi '301 and Yamamoto et al., US Patent No. 5,426,526.

Regarding claims 1-7, 9-10, 17-21, 26-27, 30-35 and 40-55, Yamazaki's figures 3 and 8 which together disclose an LCD device comprising:

- two insulating glass substrates with a liquid crystal layer inherently interposed therebetween;
- one of the insulating substrate (50) having formed thereon:
 - an active matrix circuit (fig. 8) including at least one TFT (13 & 22, figure 3);
 - a driving circuit (1) including at least one TFT (CTFT, fig. 8) for driving the active matrix circuit; wherein the TFTs in this circuit and in the active matrix circuit are formed from the same process, thus exhibited the same structure and formed from a common

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semiconductor film which formed over the insulating substrate (figure 8; col. 11, lines 7+);

- an IC (4) mounted on the substrate for controlling the driving circuit and connected to the latter by COG.

However, Yamazaki does not disclose an extended portion on one of the insulating glass substrates for the IC to be formed thereon while the driving circuit is covered by the counter substrate. Sawatsubashi does disclose the driving circuit (112, 113) which is covered by the counter substrate (col. 6, ln. 30+) and an extended portion on TFT substrate (101) beyond one side edge of the counter substrate (102) for forming the IC (i.e, 115)(see Fig. 8). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide an extended portion to Yamazaki's substrate and to cover driving circuit as shown in the Sawatsubashi's reference in order to minimize a display device (Sawatsubashi, col. 3, ln. 10). Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a memory chip or CPU chip as the IC chip as shown by Yamamoto et al. (col. 15, ln. 23) in order to obtain a high precision, high density LCD device (Yamamoto et al., col. 15, ln. 21).

Regarding claims 22-24 and 36-39, the modification to the Yamazaki's device disclose the claimed invention except for the use of only either P-type or N-type TFT for the driving circuits (1, 2), or the different locations of the channel region of the TFTs in the driving circuit and control IC. One of ordinary skill in the art would have realized the feasibility of using P-type, N-type or complementary type TFTs, for the driving circuit, or using top-gate or reverse-

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staggered type TFTs for the driving circuit and/or active matrix circuit. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use any one of those types of TFTs for the driving circuit and/or active matrix circuit and because the use of one method over another merely reflects the desire of the manufacturer and/or the practical considerations involved in the fabrication of an LCD device such as the design of the overall device, ease of manufacturing, cost efficiency, etc.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-7, 9, 10, 17-24, 26, 27, 30-35, 38-41, 43-48 and 50-55 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 3, 13 and 17 of U.S. Patent No. 5,889,291. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the application and the

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patent disclose the same semiconductor integrated circuit. Furthermore, it would have been obvious to use TFTs having LDD in Yamazaki's active matrix circuit because it is notoriously well known in the art to use TFTs having LDD as switching elements in an LCD matrix circuit and such feature in the TFTs allows for faster switching speed and lower threshold voltages; thus, the overall display would exhibit better contrast with lower power consumption.


Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Dung Nguyen whose telephone number is (703) 305-0423. The fax phone number for this Group is (703) 308-7726.

Any information of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 308-0956.

DN
10/06/2000


William L. Sikes
Supervisory Patent Examiner
Group 2871